Fisher Population Analyses
2004

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Abstract

Conservative fisher harvests during 1998-2000 allowed the fisher population to increase above the established population goal of 9,200 fishers. Higher harvests during 2001 and 2002 appeared to stabilize population growth. A harvest of 2,055 fishers was recommended for the 2004 season. This included 40 fishers in Zone F, opened for the first time.

Methods

Trappers in all zones were required to register their fishers at a DNR station. In 2003, trappers in Zone E were also required to surrender the carcass at the same time. Date of harvest and harvest zone (Fig. 1) were recorded for each carcass. A canine tooth was extracted from each carcass and all teeth were x-rayed. Kits were identified by the presence of an open foramen and wide pulp cavity (Kuehn and Berg 1981, Jenks and Bowyer 1984). Teeth from otters $\geq$ 1 years old were sent to Matson's Laboratory, Milltown, MT for processing and aging by counting annuli in the cementum. The sex of each fisher was determined by examining reproductive organs. Ovaries were removed from all female carcasses and stored in 10% formalin until they were firm enough to hand section. The sections were then examined for presence of corpora lutea.

Fisher population estimates and trends were determined using Minnesota's Fisher Population Model and data obtained from harvest registration, carcass collections, and the Winter Furbearer Track Counts. Kohn et al. (1993) described procedures and interpretations in detail for data collected during 1985-92.

The Fisher Population Model was refined in 1995-96. Major changes included adjustments to illegal harvest estimates during earlier seasons with low harvests, and direct use of track frequencies observed in Winter Furbearer Track Counts as an independent estimate of population trends. The model was then modified for application in each Fisher Management Zone in 1997. Starting population size in the model was adjusted in zones A and C in 2003 to improve the correlation between model simulated population trends and trends in winter track counts.

Results

Canine teeth were obtained from 23 fishers harvested in Zone E in 2003. Ages have been obtained from 8,075 fishers harvested since 1985 (Table 1). Age distributions have been similar between sexes. On average, juveniles have comprised approximately 50% of the fishers harvested, yearlings 25%, and adults 25%.

During 2001-2003, carcasses of 5 yearling and 4 adult female fishers have been examined for evidence of reproduction. Three of 5 yearlings and all 4 adult females had corpora lutea. Mean litter size for the 7 pregnant fishers was 2.1.

The WDNR set a statewide population goal of 9,200 fishers (1 per 2 square miles of habitat) in 1997 due to public concern about the high number of fishers. There were an estimated 10,600

fishers in the state at that time (Table 2). The 1997 fisher harvest (31% of the fall population) exceeded our harvest goal resulting in an estimated population for 1998 below the recently established population goal. Conservative harvests in 1998-2000 (6-7% of the fall population) allowed the population to rebound. More liberal harvests in 2001-2002 (14-15% of fall population) appeared to stabilize population growth. Fisher harvest in 2003 (1,107, 9% of fall population) was less then the harvest objective of 1,660. The revised fisher population models produced estimates for fall 2004 of approximately 4,000 fishers in Zone A, 3,300 in Zone B, 2,700 in Zone C, and 2,900 in Zone D. Fisher populations appear to be above goal in zones A and C and near goal in zones B and D.

The WDNR Furbearer Advisory Committee recommended harvest goals for 2004 of 625 fishers in Zone A, 475 in Zone B, 425 in Zone C, 450 in Zone D, and 40 in Zone E. The Committee also recommended that Zone F be opened for the first time with an initial harvest of 40 fishers. Harvest recommendations for zones A-D are designed to stabilize or reduce populations in these zones.

Literature Cited

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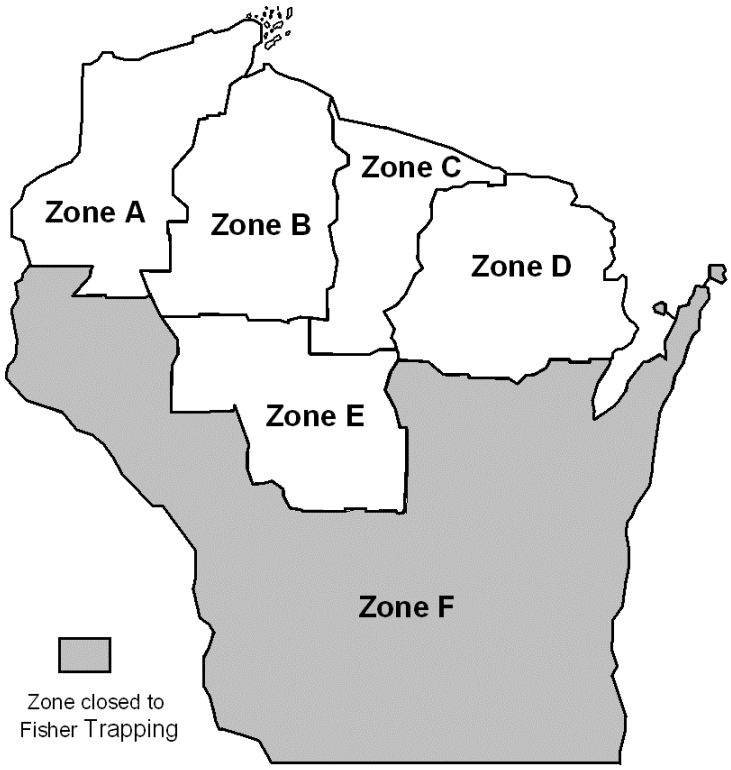

Figure 1. *Wisconsin's Fisher Management Zones open to trapping, 2003. Zone E was opened to trapping in 2000 for the first time since fishers were reintroduced.*

Table 1. *Ages of fishers harvested in Wisconsin, 1985-2003.*

Year	No. Aged	Percent in Age Class					
		Females			Males		
		Juv.	Ylg.	Adult	Juv.	Ylg.	Adult
1985-89	919	43	28	29	53	18	29
1990	271	49	34	17	50	27	23
1991	167	49	27	23	47	21	32
1992	1,420	52	25	23	51	26	24
1993	1,172	39	30	31	51	25	24
1994	1,158	55	24	22	54	24	22
1995	821	51	28	22	55	27	18
1996	0						
1997	0						
1998	247	55	31	14	65	18	18
1999	431	44	30	26	52	31	17
2000	529	44	30	26	47	31	22
2001	899	37	28	35	44	27	29
2002[a]	18	75	0	25	40	30	30
2003[a]	23	44	33	22	43	21	36

[a] Only fishers harvested in Zone E were aged.

Table 2. *Zone-specific fisher population estimates and trends, 1984-2004*[a].

Year	Fisher Management Zones				Total
	A	B	C	D	
1984	1,000	1,400	600	1,100	4,100
1985	1,100	1,700	800	1,300	4,900
1986	1,300	1,900	900	1,600	5,700
1987	1,500	2,200	1,100	1,800	6,600
1988	1,500	2,500	1,200	2,000	7,200
1989	1,600	2,900	1,400	2,300	8,200
1990	1,600	3,200	1,700	2,500	9,000
1991	1,800	3,600	1,900	2,900	10,200
1992	2,100	4,100	2,200	3,300	11,700
1993	2,100	4,000	2,400	3,300	11,800
1994	2,100	3,800	2,500	3,300	11,700
1995	2,100	3,800	2,400	2,900	11,200
1996	2,300	3,800	2,400	2,900	11,400
1997	2,300	3,900	2,400	2,900	11,500
1998	2,400	2,600	1,800	2,000	8,800
1999	2,700	2,800	2,100	2,200	9,800
2000	3,000	3,000	2,200	2,400	10,600
2001	3,400	3,300	2,400	2,800	11,900
2002	3,500	3,000	2,400	2,800	11,700
2003	3,600	3,000	2,500	2,700	11,800
2004	4,000	3,300	2,700	2,900	12,900
GOAL	1,700	3,200	1,600	2,700	9,200

[a] Population estimates for zones A and C differ from those previously reported due to adjustments to the starting population size in the model.